

General Educators' In-Service Training and Their Self-Perceived Ability to Adapt Instruction for Students With IEPs

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Abstract

Recent research has suggested that the professional development general educators receive is not adequately preparing them to properly implement inclusion-based practices. In this study, data from the Study of Personnel Needs in Special Education was used to investigate the relationship among teachers' years of experience teaching students with Individualized Education Programs (IEPs), the amount of professional development received over the past 3 years, and teachers' self-perceived ability to adapt instruction for students with IEPs. Results indicate that any amount of professional development in a 3-year period significantly predicts teachers' perceived ability to adapt instruction; however, at least 8 hours of professional development in a 3-year time frame was related to an increase in teachers' perceived ability to adapt instruction, more than twice the effect of less than 8 hours. Additionally, professional development was found to be a better predictor for increasing perceived ability to adapt instruction than was teacher experience with instructing students who have IEPs.

Introduction

Teachers who have little or no professional development in teaching students with special needs have significantly less positive attitudes concerning inclusion than those with extensive professional development (Avramidis & Kalyva, 2007). College coursework is often seen as ineffective or of little value in instruction, and teachers have relatively few hours in professional development workshops on inclusion (DeSimone & Parmar, 2006b). The resulting effect is teachers who do not believe they are adequately prepared to instruct students with disabilities (DeSimone & Parmar, 2006b; Maccini & Gagnon, 2006). Teachers' teaching efficacies, or their belief about themselves as teachers, has been shown to be a strong predictor of their actions in the classroom (Jerald, 2007). Teachers with high self-efficacies are more likely to meet the needs of their students. Therefore, a teacher with a low teaching efficacy is not likely to have teaching behaviors that positively impact students (Allinder, 1995; Berman, McLaughlin, Bass, Pauly, & Zellman, 1977; Bogler & Somech, 2004; Guskey, 1988; Stein & Wang, 1988). As the number of students with learning disabilities (LD) in general education classrooms increases, we must ask ourselves if there is progress in teachers' preparedness to teach students with LD. The current study seeks to answer this question: In what way does the amount of training and experience relate to general education teachers' self-perceived skills in adapting instruction for students with Individualized Education Programs (IEPs)?

Definitions

There are varying definitions of *inclusion*, but teachers generally agree that inclusion deals with educating students with disabilities in the general education classroom (Keefe & Davis, 1998; Snyder, Garriot, & Ayler, 2001). After a student is identified with a disability, he or she is given an IEP. IEPs are developed by a team of teachers and the parents of the student. The primary purpose of an IEP is to determine what types of services the student will receive, when he or she will receive them, and how the program's effectiveness will be evaluated (Kupper, 2000). Special needs are any disability, such as a

speech or hearing impairment, a cognitive disability, a physical impairment, or a specific LD (see Evans, 2007, for further description). An LD is a type of special need where the student has a specific cognitive disability in one or more subject areas (Avramidis & Kalyva, 2007; Evans, 2007). An LD can also be described as “a condition that makes it hard for someone of otherwise normal intelligence to read, write, speak or work with numbers” (Jost, 1993, p. 1081). However, what an LD is can be hard to define. As Jost (1993) describes it, it is an “umbrella term” and therefore is general in and of itself. As the definitions written here are given with practicality in mind, a more in-depth description of the meaning of LD is beyond the scope of this study. Additionally, providing further in-depth reviews of what IEP and LD should mean would detract from the focus of this study. Because teachers themselves view these terms in a general context, it is within this context that we wish to use them here. If we were to narrow the definitions further, then we might interpret the self-perceptions of teachers in ways that we should not, and these definitions are not meant to imply anything beyond the terms generally used in the schools and classroom.

Teacher Self-Efficacy

Self-efficacy can be described as the perceived level of ability, capability, or behaviors one possesses (Bandura, 1994). Peoples’ beliefs about what they are capable of and what their abilities are help to define their actions as individuals. Thus, they will usually commit to doing something only if they believe they can do it (Bandura, 1994; Schunk & Pajares, 2005). Teachers’ self-efficacies have consistently been found to predict their choices and effort in the classroom (Bogler & Somech, 2004; Jerald, 2007). In his review of research on teacher efficacy, Jerald (2007) found that teachers who had higher degrees of self-efficacy were more open to new ideas, more actively engaged in planning, less likely to be critical of students, and less likely to refer students to special education.

The current study investigated the relationship between teachers’ level of training in inclusion-based instruction and their perceived ability to teach students with special needs in their classrooms. Since teacher efficacy has been shown to be a reliable predictor of teacher actions, an analysis of teachers’ efficacy concerning inclusion may inform teacher training efforts that could potentially impact teachers’ actions toward students with special needs in their classrooms.

Teacher Beliefs About Inclusion

We (Kosko and Wilkins) could find little current research focusing on general education teachers’ beliefs related to students with IEPs. Additionally, the majority of the research dealing with teachers’ perceptions of teaching students with LD focuses specifically on mathematics teachers (e.g., DeSimone & Parmar, 2006a; DeSimone & Parmar, 2006b; Gagnon & Maccini, 2007; Maccini & Gagnon, 2006). Though it is true there may be specific differences in the teacher beliefs of mathematics teachers and other general education teachers about students with LD and/or special needs, it is believed that lessons can be learned from this research that may have inferences for general education teachers as a whole.

The majority of secondary mathematics teachers surveyed in three recent state and national studies believe students with LD should be given every opportunity to learn mathematics (Barco, 2007; DeSimone & Parmar, 2006b; Snyder et al., 2001), but in all of these studies, less than half of teachers surveyed believe the mathematics classroom is the best environment for them to do so (DeSimone & Parmar, 2006b). During interviews, DeSimone and Parmar (2006a) found that these teachers had interacted very little with students with LD. According to Jordan and Stanovich (2001), students with LD who interact less with their teachers have lower achievement scores. This is one possible explanation for the conflicting beliefs of inclusion but not in the mathematics classroom (DeSimone & Parmar, 2006b).

Another possible explanation for this may be how unprepared teachers are to teach their subject to students with LD. Gagnon and Maccini (2007) found that math teachers in their study felt somewhat unprepared to teach students with LD, while DeSimone and Parmar (2006b) cited only a slightly higher

comfort level in mathematics teachers' ability to adapt instruction for LD. However, the belief that the general mathematics classroom is not the best place for students with LD to learn may stem from teacher beliefs about the true causes of academic failure of students with LD. In examining dyslexic and bilingual students' academic failure, Spiridon-Georgios and Touroutoglou (2007) found that general education teachers often attributed academic failure to student- and parent-related factors. Similar to the findings of DeSimone and Parmar, Spiridon-Georgios and Touroutoglou found that general education teachers were more likely to focus on referral practices rather than instruction modification to aid their students with disabilities in academic shortcomings.

Adding to the list of conflicts, DeSimone and Parmar (2006b) found that even though math teachers on average felt able to adapt instruction, well over one-third of these teachers disagreed with the notion that their teacher education program helped them in developing philosophies, gave information on the learners' needs, or provided instructional strategies for teaching mathematics to students with LD. In fact, only a portion of teachers took coursework that focused on how to teach students with disabilities. deBettencourt (1999) found that only 41.5% of 71 surveyed general educators had taken such coursework, while Maccini and Gagnon (2006) found that just half of 77 surveyed secondary mathematics teachers had taken any coursework related to teaching mathematics to students with IEPs. Some teachers do take a course in special education, but it rarely includes information on specific strategies in teaching content (DeSimone & Parmar, 2006b).

Although teachers may not think they are fully prepared to teach students with LD (Gagnon & Maccini, 2007), they generally strongly support the ideas behind inclusion, which would lead one to believe that their opinions about inclusion are wholly positive (Barco, 2007; DeSimone & Parmar, 2006b; Snyder et al., 2001). Yet, in interviews conducted by DeSimone and Parmar (2006a), some teachers reported that what they taught was too advanced for students with LD. Further, 2 out of 3 of the teachers who had little interaction with students with LD had more positive outlooks on the effectiveness of inclusion, whereas 3 out of 4 teachers with more interaction had less positive outlooks (DeSimone & Parmar, 2006a). A portion of these negative outlooks may be associated with the disposition of students with LD who reach the secondary level. In a study concerning the effect of teacher attitudes on students with LD, Lapointe, Legault, and Batiste (2005) found that teachers' negative attitudes affect average and gifted students but not students with LD. They attributed this finding to the assumption that these students already believed they would fail; thus, negative attitudes did not affect their achievement. This seemed to be confirmed in part by the results of the study conducted by DeSimone and Parmar (2006a) in which one interviewee stated she observed these students as having expectations of failure. However, the same interviewee stated that these attitudes changed because of the inclusion program at their school.

In a dissertation looking at secondary teacher beliefs concerning inclusion, Barco (2007) found that teachers felt inclusion works for some students but not others. DeSimone and Parmar (2006a) confirm this in an interview with one of their participants. Barco gave examples of several interviewees who held this belief. These teachers had varying years of experience and were from different disciplines, but all believed that certain students currently included in regular classrooms should be in special classrooms to learn the material. One of the teachers interviewed in the study expressed that even though not all the students included would benefit academically, all would benefit socially.

Studies discussing secondary teachers' beliefs concerning the social benefits of inclusion are hard to come by. However, there are studies that look at preservice teachers' beliefs in this regard. Rademacher, Wilhelm, Hildreth, Bridges, and Cowart (1998) found that preservice teachers identify social benefits as the most positive reason for inclusion. Cook (2002) suggests that personal characteristics (e.g., patience, love of children) are more significant in implementing inclusion than knowledge, skills, or training experiences. Perhaps this is related to the finding that while preservice teachers may learn about the characteristics of students with LD, they do not think they learn how to teach students with LD (Rademacher et al., 1998). In recalling the finding that in-service teachers do not think their preservice education prepared them to teach students with LD (DeSimone & Parmar, 2006b)

but that these same teachers support inclusion (Barco, 2007; DeSimone & Parmar, 2006b; Snyder et al., 2001), a possible trend emerges.

Burke and Sutherland (2004) conducted a study comparing attitudes and beliefs of preservice and in-service teachers. Their results cited significant differences in beliefs about preparedness and confidence in the ability to properly implement inclusion. Preservice teachers in the study were cited as thinking they were more knowledgeable and prepared than in-service teachers. Additionally, preservice teachers were found to believe inclusion held academic benefits for students with special needs. The same cannot be said of the in-service teachers in the survey (Burke & Sutherland, 2004). According to Soodak, Podell, and Lehman (1998), as teachers spend more years in the classroom, they have less enthusiasm and lower expectations for students with LD. Although DeSimone and Parmar (2006b) found that, over time, teachers become more comfortable in their ability to adapt instruction.

The above literature illustrates a number of conflicts in teacher beliefs concerning inclusion. The common themes seem to show, however, a general belief that inclusion should be implemented. Two studies surveying general educators have found they do not have a strong belief in academic benefits of inclusion (Barco, 2007; Soodak et al., 1998), and research on preservice teachers indicates a belief that academic benefits lessen over time (Burke & Sutherland, 2004; Soodak et al., 1998). The strong support of inclusion for social reasons by preservice teachers (Cook, 2002; Rademacher et al., 1998) and the continued support of inclusion by general education teachers (Barco, 2007; DeSimone & Parmar, 2006b; Snyder et al., 2001) suggest that as beliefs in academic benefits lessen, support of inclusion is based mainly on social aspects. However, no research at this point has clearly outlined such a conclusion.

Training Teachers to Teach Students With IEPs

Research indicates that general education teachers take few courses on teaching students with special needs (deBettencourt, 1999; DeSimone & Parmar, 2006b; Maccini & Gagnon, 2006). Some teachers take a single course on special education in college, but the vast majority of these courses do not provide instructional strategies. These courses typically focus on the legal responsibilities of teachers with students who have IEPs and the legal rights of such students (DeSimone & Parmar, 2006b).

Professional development workshops positively impact teachers' perceived ability to teach students with LD (DeSimone & Parmar, 2006b; Miller, Wienke, & Savage, 2000); however, these workshops are offered and taken infrequently. Examining results from 228 teachers surveyed across the country, DeSimone and Parmar (2006b) found that 43% of middle school mathematics teachers had taken less than three workshops on working with students who have LD. Of the workshops that teachers did participate in, the majority of these were seen as unfruitful because they did not focus on instructional strategies that could be used in teaching their students. Miller et al. (2000) found that workshops that focus on specific strategies for teaching students with LD significantly increased general educators' perceptions of their ability to teach students with LD.

When general education teachers were asked what types of professional development they and their colleagues need most, they identified teaching and collaboration strategies as two of their top three needs (Pindiprolu, Peterson, & Bergloff, 2007). In the same assessment, administrators and special education teachers ranked behavioral assessments and inclusion strategies in the top three areas needed for professional development. Both groups identified behavior intervention as their top need in training. Administrators and special educators do not appear to perceive teaching strategies as a high priority for professional development related to special needs, which may explain why such professional development opportunity is seldom offered to general education teachers (DeSimone & Parmar, 2006b).

The literature above suggests that general educators want to learn more effective strategies for teaching students with LD as they did not study this in their college coursework (DeSimone & Parmar, 2006b; Maccini & Gagnon, 2006); yet, they are not offered professional development opportunities in this area (DeSimone & Parmar, 2006b; Pindiprolu et al., 2007). Further, the lack of in-depth in-service

training limits the effectiveness of teaching strategies discussed in such professional development (Cook & Schirmer, 2003).

Research Question

Previous research suggests that teachers are not given enough opportunities for professional development on inclusion-based practices, but the research does not provide information on how much training general educators need. In order to address this issue, the current study asks the following question: In what way does the amount of training and experience relate to general education teachers' self-perceived skill in adapting instruction for students with IEPs?

Methods

Data

Data from the Study of Personnel Needs in Special Education (SPeNSE) were used in this study (Carlson et al., 2002). Data were gathered through interviews over the phone from teachers, administrators, and paraprofessionals during the 1999–2000 school year. SPeNSE was funded by the U.S. Department of Education and Office of Special Education Programs. SPeNSE was designed to address shortages in personnel providing services to students with special needs and to investigate factors contributing to the training these personnel receive.

There was a two-phase sample design used in the SPeNSE study. During the first phase, three sampling units were randomly selected from the Quality Education Data (QED), an education marketing service firm. Local education agencies (e.g., locally operated school districts) were stratified by geographical region and district size. Intermediate education units (e.g., state-operated school districts) were also stratified by geographic region. Seventy-six state schools for students with sensory impairments were selected from the QED, and all were included (Carlson et al., 2002).

The second phase of the sample design used a simple random sample of service providers (e.g., teachers, administrators, paraprofessionals) from the personnel rosters of the sampling units listed above. Only 46% of the agencies sampled participated, and of these, 69% of the sampled service providers participated (Carlson et al., 2002). Therefore, the low participation in this study should be considered a limitation.

The current study used data collected from general education teachers who participated in the SPeNSE study. For the purposes of this study, general education teachers were defined as those identifying themselves as teaching early childhood education, kindergarten, elementary education, social sciences, language arts, mathematics, and science. The final sample size of 1,126 was approximately 14% of the total sample in the study. The distribution of the sample can be seen in Table 1.

Table 1
Sample Distribution

Teaching assignment	n	%
Early childhood	226	20.1
K–5	383	34.0
Social sciences	101	9.0
Language arts	237	21.0
Mathematics	114	10.1
Science	65	5.8
Total	1126	100

Measures

Teachers' self-perceived ability to adapt instruction for students with IEPs was measured based on the answer to the following: "To what extent do you agree with the following statements? ...I am skillful in...adapting instruction for students with IEPs" (Office of Special Education Programs, 2000, p. 13). The teachers rated their level of agreement using a Likert scale (1 = not at all; 2 = small extent; 3 = moderate extent; 4 = great extent). Immediately following the question regarding skill in adapting instruction, teachers were asked whether they received preservice preparation in adapting instruction for IEP students, to which they replied "yes" or "no" (coded 1 = yes, 0 = no). Responses to this question were used as an indicator of preservice preparation related to inclusion. Interviewers also asked the number of hours of professional development teachers had received in the past 3 years on adapting instruction for IEP students. The available choices were "none," "less than 8 hours," and "8 or more hours." Professional development was dummy coded to create three groups: "None," "less than 8 hours," and "8 hours or more." Additionally, the number of years a teacher has taught students with IEPs was included in the analysis as a continuous variable.

Analysis

Correlation and multiple regression techniques were used to analyze the relationship among the amount of professional development, preservice preparation, number of years teaching students with IEPs, and teachers' self-perceived skill level in adapting instruction for students with IEPs. In the regression model, teachers' ability to adapt instruction was regressed on professional development and teaching experience, and "None" was used as the comparison group. Some teachers had more years experience than others in the sample, and this experience may have influenced their perceived skill in adapting instruction. Including this variable in the regression model helped to control for this possible influence. Because of the reduced response rate for the question related to preservice preparation, this variable was not included in the model, but the relationship between teachers' ability to adapt instruction and preservice preparation was investigated separately using Pearson correlations.

Results

Means, standard deviations, and intercorrelations for the study variables can be found in Table 2. On average, teachers' reported belief in their ability to adapt instruction indicated that they felt a little more than moderately comfortable adapting instruction for students with IEPs ($M = 3.25$, $SD = 0.91$). The number of responses to the preservice question was much lower than the other items ($n = 104$). For this reason, the variable was not included in the regression model. However, a moderate but statistically significant correlation ($r = .25$, $p < .01$) was found between preservice preparation and teachers' perceived ability to adapt instruction.

Table 2
Means, Standard Deviations, and Intercorrelations for Variables

	Preservice	PD (none)	PD (<8 hrs)	PD (≥ 8 hrs)	Years teaching IEP	Adapt instruction
Preservice	--					
PD (none)		-.54**	--			
PD (<8 hrs)		.41**	-.65**	--		
PD (≥ 8 hrs)		.14	-.33**	-.50**	--	
Years teaching IEP		.14	-.02	.03	-.02	--
Adapt instruction		.25**	-.25**	-.02	.30**	.15**

Table 2 (continued)

	Preservice	PD (none)	PD (<8 hrs)	PD (≥ 8 hrs)	Years teaching IEP	Adapt instruction
M	.51	.30	.50	.20	9.72	3.25
N	104	475	475	475	559	648
SD	.50	.46	.50	.40	6.8	.91

* $p < .05$, ** $p < .01$, *** $p < .001$

Teachers' self-perceived ability to adapt instruction was regressed on hours of professional development and years of teaching experience. Note that the correlation between the level of professional development and teaching experience was not different from 0 (see Table 2). This suggests noncollinearity, or no overlap, in explained variance for these variables. Standardized and unstandardized coefficient estimates for the model are presented in Table 3. The model was found to explain 14.5% of the variance in a teacher's self-perceived ability to adapt instruction. Additionally, the regression model was found to have a medium effect size ($f^2 = .17$; see Cohen, 1992). The amount of professional development was found to be statistically significant and positively related to teachers' perceived ability to adapt instruction. In particular, when comparing standardized coefficients, 8 hours or more of professional development was found to have a stronger relationship ($\beta = 0.39, p < .01$) with teachers' perceived ability to adapt instruction than either professional development of less than 8 hours ($\beta = .16, p < .01$) or the number of years teaching students with IEPs ($\beta = 0.19, p < .01$). The effect of "more than 8 hours" of professional development was twice that of the other two variables in the model. IEP teaching experience was also found to be statistically significant and positively related to teachers self-perceived ability to adapt instruction ($\beta = 0.19, p < .01$).

Table 3
Regression of Teachers' Self-Perceived Ability to Adapt Instruction on Professional Development and Years Teaching Students With IEPs

	Unstandardized coefficients		Standardized coefficients	
	β	SD	β	<i>t</i>
Professional development (8 hours or more)	0.64***	.083	0.39	7.67
Professional development (less than 8 hours)	0.22**	.067	0.16	3.24
Number of years teaching IEP	0.02***	.004	0.19	4.28

* $p < .05$, ** $p < .01$, *** $p < .001$; $R^2 = .145, n = 475$

Discussion and Implications

The focus of this study was to investigate the relationship among teachers' number of professional development hours, years teaching students with IEPs, and self-perceived ability to adapt instruction for students with IEPs. The analyses showed that the more hours of professional development teachers have the more able they believe they are to adapt instruction for students with IEPs. In particular, although some professional development is better than none, having 8 hours or more of professional

development is more than twice as effective as less than 8 hours in improving teachers' self-perceived ability to adapt instruction.

Further, the results of the current study suggest that it may take large amounts of training to have a meaningful influence. As this study used a categorical variable to describe the amount of professional development teachers had received, the results cannot discern a specific threshold for the amount of professional development needed to increase teachers' perceived ability to adapt instruction. While any amount of professional development seems to increase teachers' perceived ability to adapt instruction, larger amounts (e.g., 8 or more hours) more than doubles the effect. In other words, a 1-hour session every year may not be very effective. Although teachers, on average, feel moderately comfortable adapting instruction, we must ask ourselves if this comfort level is good enough. Recent studies suggest teachers do not believe it is (DeSimone & Parmar, 2006b; Pindiprolu et al., 2007).

Teachers have been found to have limited hours of in-service training on inclusion-based practices (DeSimone & Parmar, 2006b). Therefore, a clear implication of this study is for administrators to offer extensive workshops on specific teaching strategies for students with IEPs. The implications from this study and suggestions from other researchers (Cook & Schirmer, 2003; DeSimone & Parmar, 2006b) imply these workshops should be conducted periodically and more than once a year. It may also be beneficial to receive teacher feedback in order to evaluate the effectiveness of such training sessions.

Huffman, Thomas, and Lawrenz (2003) evaluated the effectiveness of different types of professional development for mathematics and science teachers. Although the study did not focus on teacher training in regard to inclusion, the findings do provide information on the types of professional development that effectively changed teachers' instructional practices. Specifically, Huffman et al. found that professional development was more effective when teachers developed curriculum materials or when they evaluated classroom scenarios or real classroom situations. Research suggests teachers want more practical inclusion training (DeSimone & Parmar, 2006b; Miller et al., 2000); thus, the use of professional development as discussed by Huffman et al. may improve inclusive teaching practices. Teachers may think their training is worthwhile if they are provided opportunities to develop curriculum materials for teaching in an inclusive classroom, as well as opportunities to evaluate inclusion classroom scenarios. Additionally, the findings from the current study suggest that such training should be offered and provided often.

Professional development was found to be a better predictor of teachers' improved perceptions of their ability to adapt instruction for students with IEPs than years of experience teaching such students. Roll-Pettersson (2008) found similar results when examining teacher beliefs about students with dyslexia or mild mental retardation. Such results do not suggest teaching experience should be discounted—quite the contrary. It only suggests that experience is not the only means by which teachers improve their skills in working with students with IEPs.

The implications from the review of literature and the results of this study cannot be understated. Teachers do not feel they have been prepared to teach students with disabilities (DeSimone & Parmar, 2006b; Maccini & Gagnon, 2006). What they want is more training on specific teaching strategies (Pindiprolu et al., 2007). However, DeSimone and Parmar (2006b) and Maccini and Gagnon (2006) suggest this training is not taking place. From here there are several objectives worth pursuing: One is to identify inclusion-based teaching strategies that general educators can apply to their specific content areas; another is to find the best ways to teach these strategies to teachers so that they can properly implement them. The current study found that teachers who had more professional development in adapting instruction for students with IEPs felt more skillful in adapting instruction. Therefore, the findings of this study suggest that one major objective should be to provide extended professional development on adapting instruction for students with IEPs. However, further research is necessary to know how much professional development is enough.

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